

We claim:

1. A receiver circuit for a communications terminal,
comprising:

a signal-receiving device providing K analog reception
signals; and

a signal pre-processing circuit configured downstream from
said signal-receiving device;

said pre-processing circuit including:

an analog/digital converter device having K
analog/digital converters connected in parallel for
sampling the K reception signals independently of one
another with a sufficient sampling rate and for providing
k digital signals;

a filter device connected downstream from said
analog/digital converter device; and

a conversion device configured between said
analog/digital converter device and said filter device;

said filter device having N digital filters connected in
parallel for filtering the K digital signals;

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K and N being greater than zero; and

said conversion device being configured such that N is less than K.

2. The receiver circuit according to claim 1, wherein $N = 1$.

3. The receiver circuit according to claim 1, wherein said conversion device includes a multiplexer.

4. The receiver circuit according to claim 1, wherein said conversion device includes a plurality of digital zero-inserting elements that are connected in parallel.

5. The receiver circuit according to claim 1, wherein said conversion device includes K digital zero-inserting elements that are connected in parallel.

6. The receiver circuit according to claim 1, wherein one of said N digital filters has an order of magnitude L between 5 and 20.

7. The receiver circuit according to claim 1, wherein one of said N digital filters has an order of magnitude L between 10 and 18.

8. The receiver circuit according to claim 1, wherein one of said N digital filters includes:

a plurality of single digital filters; and

sampling rate reduction circuits that configured in series in an alternating fashion.

9. The receiver circuit according to claim 1, wherein:

said signal-receiving device includes a single reception sensor outputting a single sensor reception signal; and

the K reception signals are generated by splitting the reception signal.

10. The receiver circuit according to claim 1, wherein:

said signal-receiving device includes a single reception sensor outputting a single sensor reception signal; and

the K reception signals are generated by splitting the reception signal into an in-phase reception signal and a quadrature reception signal.

11. The receiver circuit according to claim 1, wherein said signal-receiving device includes K reception sensors.

12. The receiver circuit according to claim 1, wherein said signal-receiving device includes K/2 reception sensors.

13. The receiver circuit according to claim 1, wherein said signal-receiving device includes a plurality of reception sensors.

14. The receiver circuit according to claim 13, wherein each of said plurality of said reception sensors has a directional reception characteristic for sensing radio signals in a predefined spatial segment.

15. A mobile station of a mobile radio system, comprising:

a receiver circuit including:

a signal-receiving device providing K analog reception signals; and

a signal pre-processing circuit configured downstream from said signal-receiving device;

said pre-processing circuit including:

an analog/digital converter device having K analog/digital converters connected in parallel for sampling the K reception signals independently of one another with a sufficient sampling rate and for providing k digital signals;

a filter device connected downstream from said analog/digital converter device; and

a conversion device configured between said analog/digital converter device and said filter device;

said filter device having N digital filters connected in parallel for filtering the K digital signals;

K and N being greater than zero; and

said conversion device being configured such that N is less than K.

16. A method for signal processing in a receiver circuit of a communications terminal, which comprises:

providing a signal receiving device;

providing a signal pre-processing circuit having an analog/digital converter device located in a signal path downstream of said signal-receiving device;

providing the analog/digital converter device with K analog/digital converters connected in parallel;

obtaining K digital signals by operating the K analog/digital converters independently of each other and with a sufficient sampling rate to digitize the K analog reception signals;

connecting a filter device downstream of the analog/digital converter device and providing the filter device with N digital filters connected in parallel;

filtering the K digital signals with the filter device;

providing a conversion device in a signal path between the analog/digital converter device and the filter device;

using the conversion device to process the K digital signals in a manner such that K and N are integers greater than 0 and N is less than K.

17. The method according to claim 16, which comprises:

in the conversion device, multiplexing the K digital signals into N signals; and

providing the N signals to N inputs of the filter device.

18. The method according to claim 16, which comprises: with the conversion device, inserting a predefined number of bits with a zero value between two successive bits in each of the K digital signals.

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